

CHICAGO[®]

Electric

DUAL DOWEL JOINTER

120V/60HZ

Model 97427

SET UP AND OPERATING INSTRUCTIONS



Diagrams within this manual may not be drawn proportionally.
Due to continuing improvements, actual product may differ slightly from the product described herein.

Distributed exclusively by Harbor Freight Tools[®].

3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

Copyright[©] 2008 by Harbor Freight Tools[®]. All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.

For technical questions or replacement parts, please call 1-800-444-3353.

SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

CAUTION

CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.

General Safety Rules



WARNING! Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury. The term "power tool" in all of the warnings listed below refers to your Duel Dowel Jointer.

SAVE THESE INSTRUCTIONS

1. **Work area safety**
 - a. Keep work area clean and well lit. *Cluttered or dark areas invite accidents.*
 - b. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. *Power tools create sparks which may ignite the dust or fumes.*
 - c. Keep children and bystanders away while operating a power tool. *Distractions can cause you to lose control.*
2. **Electrical safety**
 - a. Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded power tools. *Unmodified plugs and matching*

outlets will reduce risk of electric shock.

- b. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. *There is an increased risk of electric shock if your body is grounded.*
- c. Do not expose power tools to rain or wet conditions. *Water entering a power tool will increase the risk of electric shock.*
- d. Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. *Damaged or entangled cords increase the risk of electric shock.*
- e. When operating a power tool outdoors, use an extension cord suitable for outdoor use. *Use of a cord suitable for outdoor use reduces the risk of electric shock.*

3. Personal safety

- a. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. *A moment of inattention while operating power tools may result in serious personal injury.*
- b. Use safety equipment. Always wear eye protection. *Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- c. Avoid accidental starting. Ensure the switch is in the off-position

before plugging in. Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

- d. Remove any adjusting key or wrench before turning the power tool on. *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
- e. Do not overreach. Keep proper footing and balance at all times. *This enables better control of the power tool in unexpected situations.*
- f. Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. *Loose clothes, jewelry or long hair can be caught in moving parts.*
- g. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. *Use of these devices can reduce dust-related hazards.*

4. Power tool use and care

- a. Do not force the power tool. Use the correct power tool for your application. *The correct power tool will do the job better and safer at the rate for which it was designed.*
- b. Do not use the power tool if the switch does not turn it on and off. *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
- c. Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. *Such preventive safety measures reduce*

the risk of starting the power tool accidentally.

- d. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. *Power tools are dangerous in the hands of untrained users.*
 - e. Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. *Many accidents are caused by poorly maintained power tools.*
 - f. Keep cutting tools sharp and clean. *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*
 - g. Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. *Use of the power tool for operations different from those intended could result in a hazardous situation.*
5. **Service**
- a. Have your power tool serviced by a qualified repair person using only identical replacement parts. *This will ensure that the safety of the power tool is maintained.*

Vibration Hazard

This tool vibrates during use. Repeated or long-term exposure to

vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Wear suitable gloves to reduce the vibration effects on the user.
4. Use tools with the lowest vibration when there is a choice between different processes.
5. Include vibration-free periods each day of work.
6. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.
7. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

Specific Safety Rules

1. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
2. Always examine the workpiece for foreign objects. Never attempt to cut into nails or other metal objects.
3. Always keep your hands and fingers well away from the chip ejection area while the tool is running.
4. Avoid unintentional starting. Prepare to begin work before turning on the tool.
5. Begin cutting only when the Bits have reached full speed.
6. Keep the Cutter Head and Drive Guards in place and in proper working order.
7. Do not make jointing or planing cuts deeper than 1/8 inch.
8. Use hold-down/push blocks for jointing material narrower than 3 inches, or planing material thinner than 3 inches.
9. Do not perform jointing or planing cuts on pieces shorter than 8 inches in length.
10. Do not lay the tool down until it has come to a complete stop. Moving parts can grab the surface and pull the tool out of your control.
11. Do not leave the tool unattended when it is plugged into an electrical outlet. Turn off the tool, and unplug it from its electrical outlet before leaving.
12. Use clamps (not included) or other practical ways to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.
13. This product is not a toy. Keep it out of reach of children.
14. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:
 - Avoid operating alone.
 - Do not use with power switch locked on.
 - Properly maintain and inspect to avoid electrical shock.
 - Any power cord must be properly grounded. Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.
15. Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known [to the State of California] to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead-based paints
 - Crystalline silica from bricks and cement or other masonry products
 - Arsenic and chromium from chemically treated lumberYour risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with

approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)

16. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.



SAVE THESE INSTRUCTIONS.

GROUNDING

WARNING

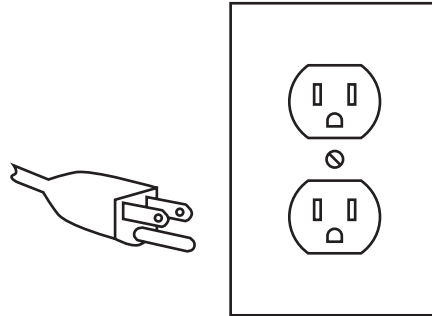
TO PREVENT ELECTRIC SHOCK

AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:



Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

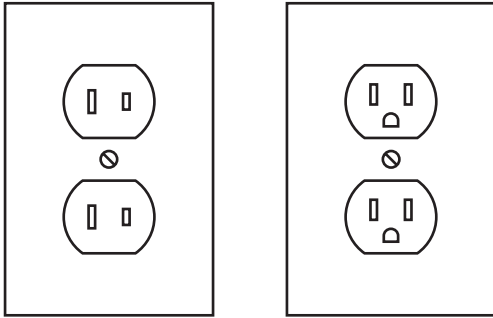
Grounded Tools: Tools with Three Prong Plugs



3-Prong Plug and Outlet

1. Tools marked with “Grounding Required” have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. **(See 3-Prong Plug and Outlet.)**
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool’s grounding system and must never be attached to an electrically “live” terminal. **(See 3-Prong Plug and Outlet.)**
3. The tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the preceding illustration. **(See 3-Prong Plug and Outlet.)**

Double Insulated Tools: Tools with Two Prong Plugs



Outlets for 2-Prong Plug

1. Tools marked “Double Insulated” do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. **(See Outlets for 2-Prong Plug.)**
2. Double insulated tools may be used in either of the 120 volt outlets shown in the preceding illustration. **(See Outlets for 2-Prong Plug.)**

Extension Cords

1. **Grounded** tools require a three wire extension cord. **Double Insulated** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)** The smaller the gauge number of the wire, the greater the capacity of the cord. For

example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**

3. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Table A.)**
4. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Table A.)**
5. If you are using an extension cord outdoors, make sure it is marked with the suffix “W-A” (“W” in Canada) to indicate it is acceptable for outdoor use.
6. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
7. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

SPECIFICATIONS

Electrical Requirements	120 V~ / 60 Hz 3.55 No Load Amps / 710 Watts Power Plug Type: 2-Prong, Polarized Power Switch Type: Lockable for continuous run
Motor RPM	16,500
Drill Bit Diameter	1/4" (Qty 2)
Maximum Drilling Depth	1-7/16"
Width Between Drilling Holes	1-5/16" (On Center)
Fence Adjustments	22-1/2° / 45° / 67-1/2° / 90°

UNPACKING

When unpacking, check to make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

INITIAL SET UP INSTRUCTIONS



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠️ WARNING

TO PREVENT SERIOUS INJURY

FROM ACCIDENTAL OPERATION:

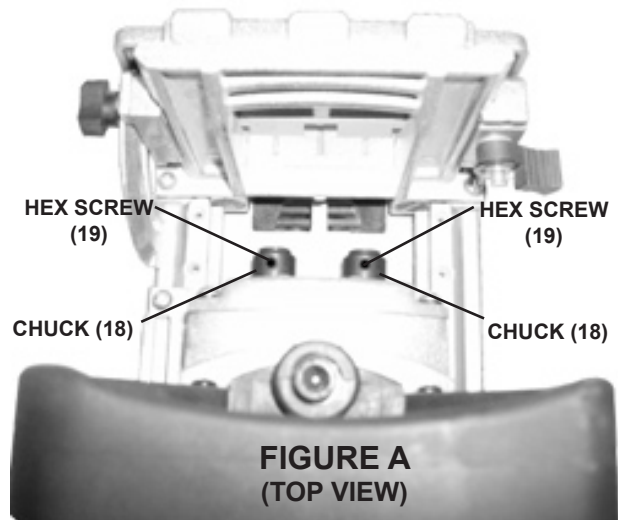
Turn the Power Switch of the tool to its "OFF" position and unplug the tool from its electrical outlet before assembling or making any adjustments to the tool.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

Assembly

To Install The Drill Bits:

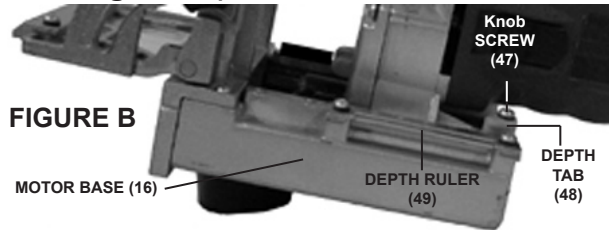
1. Rotate the two Chucks (18) so that their Hex Screws (19) are on top. (See Figure A.)
2. Use the provided Hex Key (86) to loosen the two Hex Screws (19). (See Figure A.)
3. Insert the shafts of the two Bits (17) (with flat face of shank facing the screw) fully into the two Chucks (18).
4. Secure the Bits (17) into the Chucks (18) by using the Hex Key (86) to firmly tighten the Hex Screws (19). (See Figure A.)



To Adjust The Cutting Depth:

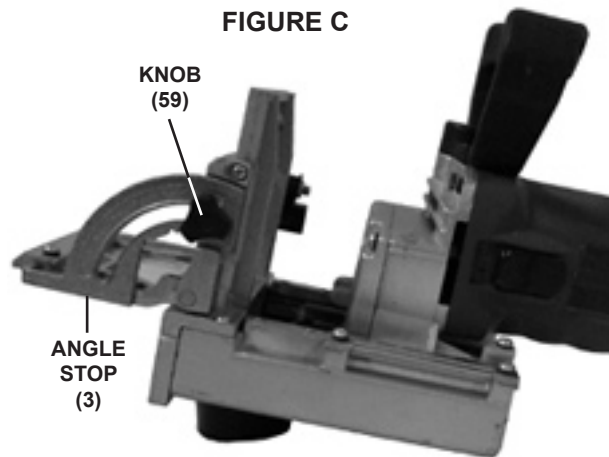
1. Move the Motor Base (16) as far back as it will go. (See Figure B.)

2. Loosen the Screw (47), and set the cutting depth by sliding the Depth Tab (48) along the Depth Ruler (49). **(See Figure B.)**
3. Retighten the Knob Screw (47) to lock the adjustment in place. **(See Figure B.)**



To Adjust The Cutting Angle:

1. Loosen the Knob (59). **(See Figure C.)**
2. Move the Angle Stop (3) to the desired angle. **(See Figure C.)**
3. Retighten the Knob (59). **(See Figure C.)**

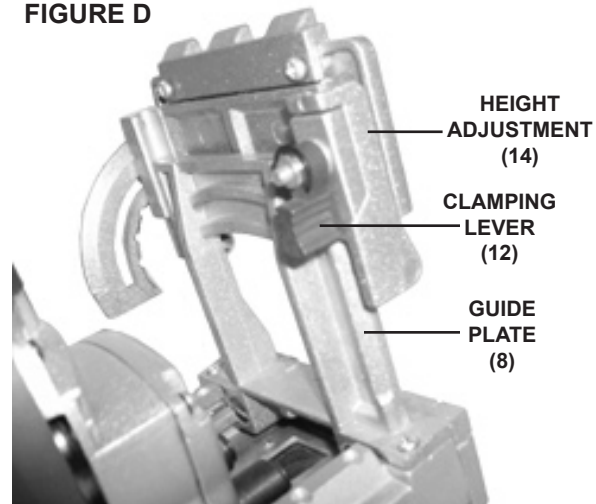


To Adjust The Height:

1. Loosen the Clamping Lever (12). **(See Figure D.)**
2. Move the Height Adjustment Lever (14) to the desired height, using the Scale on the Guide Plate (8). **(See Figure D.)**

3. Retighten the Clamping Lever (12). **(See Figure D.)**
4. **NOTE:** The height must correspond to half the thickness of the workpiece. Also, the groove of the Guide Plate (8) must always be in the middle of the workpiece.

FIGURE D



OPERATING INSTRUCTIONS

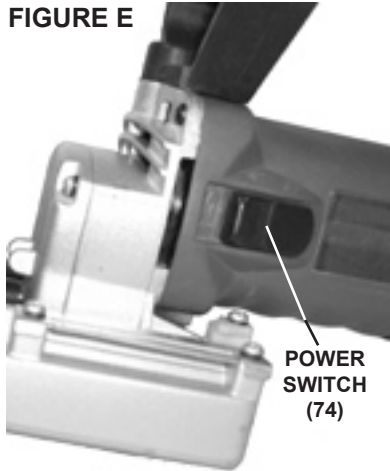


Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

The Power Switch:

1. To turn on the Dowel Jointer, move the Power Switch (74) forward. **(See Figure E, next page.)**
2. **NOTE:** The Power Switch (74) is lockable for continuous running. To lock the Power Switch in its “ON” position, move the Switch all the way forward until it locks in place. **(See Figure E, next page.)**

3. To turn off the Dowel Jointer, move the Power Switch (74) all the way backward. **(See Figure E.)**



5. Push the Motor Base (16) carefully forward as far as possible.
6. When finished cutting, move the Motor Base (16) backward, and turn the Dowel Jointer off.

To Join The Workpieces:

1. When the holes in the workpieces have been made, the workpieces can be joined together.
2. Place wood glue in both grooves of the workpieces.
3. Place a dowel pin in the hole of one workpiece.
4. Insert the other workpiece onto the dowel pin.
5. Clamp the workpieces together. Then wait until the glue is dry. (Read glue manufacturer's instruction.)

To Mark The Workpiece:

1. Before starting with the Dowel Jointer, the workpieces must be marked as follows:
 - a. Place the two workpieces on top of each other.
 - b. Secure the workpieces, using a vise or clamps (neither included).
 - c. Mark the center of the grooves.

To Position the Dowel Jointer for Large Workpieces:

1. Place the Dowel Jointer near the workpieces.
2. The middle of the Motor Base (16), which is marked on the Guide Plate (8), must face the center of the groove in the workpiece.
3. Move the Motor Base (16) backward.
4. Hold the Dowel Jointer with both hands, and turn the tool on.

MAINTENANCE & SERVICING

⚠ WARNING **TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**
Turn the Power Switch of the tool to its “OFF” position and unplug the tool from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Inspection, Maintenance, and Cleaning

1. **BEFORE EACH USE**, inspect the general condition of the tool. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation.

2. **BEFORE EACH USE**, check to make sure the Bits (17) are firmly secured in place, sharp, and free of cracks or bends.

3. **AFTER USE**, clean external surfaces of the tool with a clean, moist cloth and mild detergent. Do not use solvents.

4. **WHEN STORING**, keep the tool and its accessories in its Carrying Case. Make sure to store the Carrying Case in a clean, dry, safe location out of reach of children and other unauthorized people.

5. **⚠WARNING!** If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.

TROUBLESHOOTING

Problem	Possible Causes	Possible Solutions
Tool will not start	1. No power at outlet. 2. Cord not connected.	1. Check power at outlet. 2. Check that cord is plugged in.
Tool produces unsatisfactory cuts.	1. Bits not firmly secured. 2. Bits are dull. 3. Bits are cracked or bent.	1. Make sure Bits are firmly secured in the Chucks. 2. Use only sharp Bits. 3. Replace with new Bits.



Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.

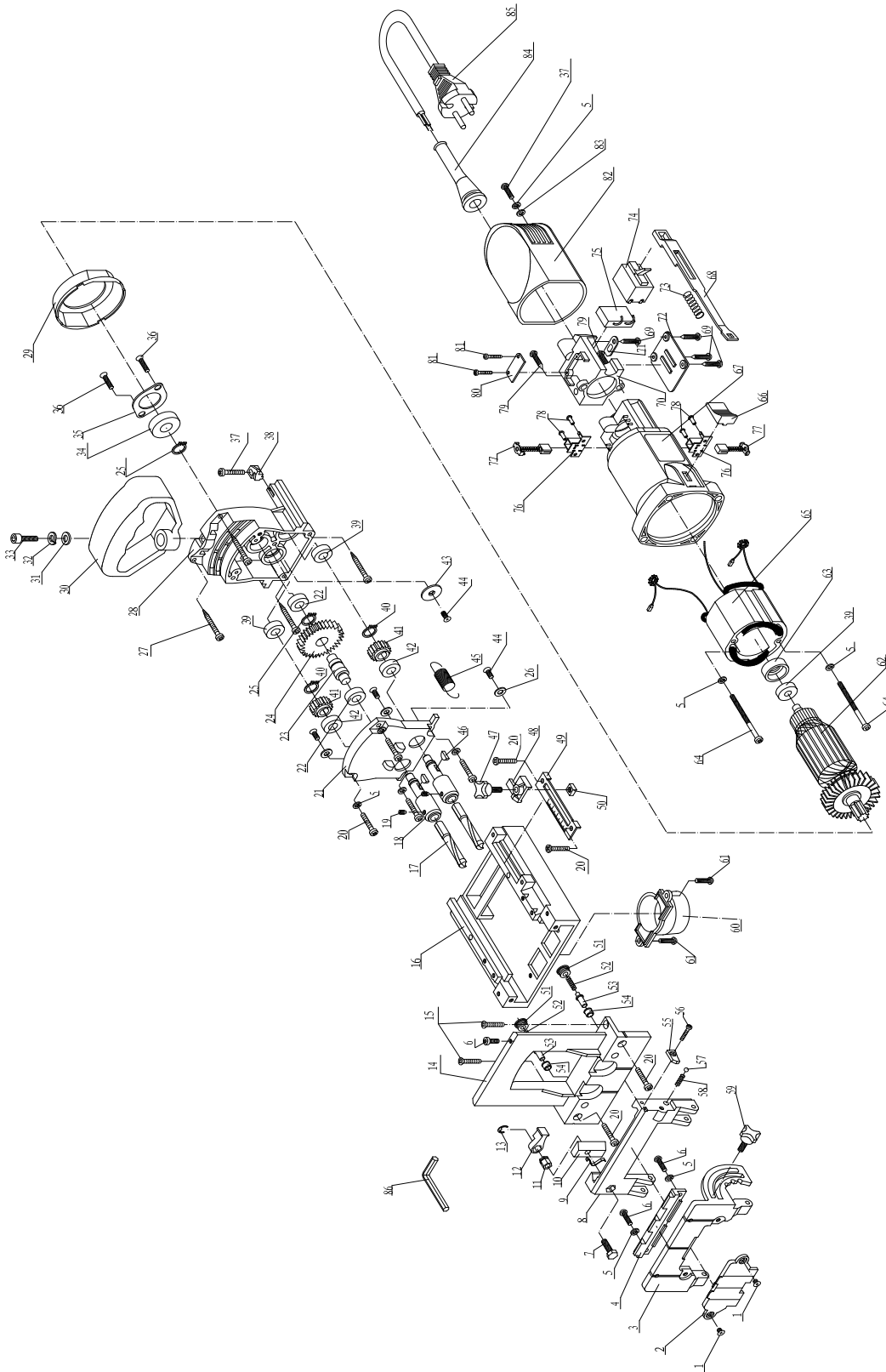
PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

PARTS LIST

No	Specifications	Qty			
1	cross sunk-head screw M4×6	2	46	Wood-ruff key 3×10	2
2	front plate	1	47	Knob Screw	1
3	angle stop	1	48	Depth Tab	1
4	orientation block	1	49	Depth ruler	1
5	washer 4	9	50	square nut M5	1
6	cross panhead screw M4×8	3	51	spring cap	2
7	hexagon bolt M5×25	1	52	spring for fixing pin	2
8	guide plate	1	53	pin	2
9	fixing spring	1	54	Slide bush	2
10	lock clamp	1	55	finger	1
11	hex nut	1	56	cross panhead screw M3x6	1
12	Clamping Lever	1	57	steel ball Ø5	1
13	Check ring	1	58	Spring	1
14	Height adjustable level	1	59	short knob	1
15	cross sunk-head screw M4×12	2	60	bend tube	1
16	motor base	1	61	cross panhead screw M4x52	2
17	bit	2	62	rotor	1
18	Chuck	2	63	rubber bearing cover	1
19	inner hexagon set screw M4×5	2	64	cross panhead screw M4x52	2
20	cross panhead screw M4×10	4	65	stator	1
21	Front cap	1	66	slide switch knob	1
22	oil bearing	2	67	housing	1
23	shaft	1	68	switch bar	1
24	middle gear	1	69	cross panhead self-tapping screw ST4x12	4
25	checking ring 12	2	70	switch holder	1
26	big flat washer 5	5	71	cable clamp	1
27	cross panhead self-tapping screw ST4.2×16	4	72	switch clamp	1
28	reduction box	1	73	spring	1
29	wind baffle	1	74	power switch	1
30	handle	1	75	capacitor 0.22uF	1
31	flat washer 6	1	76	brush holder	2
32	spring washer 6	1	77	carbon brush	2
33	inner hexagon column-head screw M6x20	1	78	rivet 3x10	4
34	bearing 80101	1	79	cross panhead self-tapping screw ST4x14	2
35	29 bearing cover	1	80	clamp for choke	1
36	cross sunk-head screw M4x8	2	81	cross panhead self-tapping ST3x10	2
37	cross panhead screw M4x16	2	82	back cover	1
38	blocker	1	83	flat washer 4	1
39	bearing 80017	3	84	cable jacket	1
40	Check Ring 9	2	85	cable plug	1
41	gear	2	86	hex key	1
42	bearing 80019	2			
43	bearing cover for bearing cover	1			
44	cross sunk-head screw M4x8	4			
45	circlip	2			

ASSEMBLY DIAGRAM



LIMITED 1 YEAR / 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that for a period of ninety days from date of purchase that the engine/motor, the belts (if so equipped), and the blades (if so equipped) are free of defects in materials and workmanship. Harbor Freight Tools also warrants to the original purchaser, for a period of one year from date of purchase, that all other parts and components of the product are free from defects in materials and workmanship (90 days if used by a professional contractor or if used as rental equipment). This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.